THE INDIANA

FARMER & GARDENER.

Vol. I. INDIANAPOLIS, OCTOBER 4, 1845. No. 19.

PUBLISHED BY

S. V. B. NOEL & CO.

TERMS.—The FARMER AND GARDENER is published *semi-monthly*, each number containing 16 royal octavo pages, at *One Dollar* per annum per copy; *Seventy-five Cents* per copy for Four and less than Ten copies; and *Fifty Cents* per copy for Ten or more copies to the same Post Office. All subscriptions IN ADVANCE.

INDIANA FARMER & GARDENER.

Indianapolis, Saturday, October 4, 1845.

Large Crops.

FATHER OF A LARGE FAMILY.— Mr. Jas. McGuire has presented us a basket of *very* large Neshanoc potatoes, with their history. One potato was taken, weighing two and a half pounds, by Mr. Webb of this place, and each eye scooped out and planted *one to a hill*. The potato made *sixty-eight hills*. Sixteen hills were dug this fall, and yielded two and a half bushels. At this rate the sixty-eight hills will yield about twelve bushels; which is certainly enough for *one* potato. But Mr. Webb supposes that the remaining hills will average more than those which he has dug.

WHEAT.—The wheat crop of Mr. Trigg mentioned in our last as fifty bushels per acre, proves, upon measurement, to be *forty*. But this is a great yield for this region. The field had been in clover two years, was plowed early in the season, again at midsummer, and, lastly, plowed for sowing.

CORN.—Hiram Bacon informs us that he has, this season, raised a hundred and twenty-five bushels of corn, measured in a wagon bed, to the acre. The field was an old sheep pasture. The particulars of cultivation we should like to learn from Mr. Bacon. Mr. Bacon does not seem content to be the best cheese-maker in this region; he means to try his hand at corn also; and for a beginning we think he need not be ashamed. His land is not the real corn bottom-land, but second bench and upland.

Names of Trees--Labels.

It is of *great* importance for every farmer to preserve the names of his fruit trees; and no amateur cultivator should think himself worthy of a name whose garden and fruit ground is not registered and labelled.

It is best in every case to have a fruit book, in which should be entered the name of each tree, its place, time of planting, from whom obtained, how old it was from the graft or bud, when set out, its size, condition, etc.

Such a book, kept in the house, is a sure and permanent record of the names of your fruit trees. Besides this, each tree should have a *label* attached to it. For, in passing through an orchard or fruit garden, it is desirable to know the names of trees without the inconvenience of carrying your book under your arm. The labels are for daily use; the book keeps a permanent record, so that if a label be lost the name of the tree does

not go with it. It is quite provoking to examine a friend's premises without being able to learn the name of a single tree. Besides, every cultivator should know the names of his trees as well as of his cattle; otherwise they will get local names, and the same fruit have a new name in each orchard.

A Trip to Bloomington.

In a trip of some fifty miles to Monroe county, we had occasion to make some observations upon agricultural matters, which we shall record.

Weeds in fence-corners.—We do not remember one farm unexceptionable in this respect. Whether the field was in corn, wheat, or grass, the fences were turned into hedges of weeds. To speak of it as wasting land would only make men laugh, who have more land than they can cultivate. To speak of it as slovenly would be an appeal to a sense of which the owners seem utterly destitute—a sense of *neatness*. But all common weeds are to be easily endured, when compared with

The Canada Thistle.—We found this agricultural pest, growing on the border of several fields; as yet but a few roots, but enough to seed a dozen acres; and unless, peremptory measures are taken, to overun the farm. Can farmers understand what this scourge is that they suffer it so quietly, or rather so lazily? Will not some of our readers who ran away from the State of New York to get rid of this plague, set forth its evils for the benefit of such of our readers, if such we have, as permit this prolific abomination to grow on their land?

Preparing for Wheat.—We saw several fine patches of wheat two inches high. Only one of all that we saw was *evenly* sown.—Upon some *lands* in each field there seemed to have been a third more seed cast than upon others. Where the wheat was plowed in, the seed had, in plowing, been turned into rows or plow-drills. A *cultivator* is, by far, better than a plow to cover down wheat.

Many farmers were just breaking up for seeding. The process was open to serious objections. Many fields, on which wheat had this summer been cut, were going down to wheat again. The straw had been cradled close in harvesting, cattle were afterwards turned upon the lot for pasture, so that, having taken off an exhausting crop, the farmer was plowing under neither stubble nor weeds, nor stable manure, nor anything else to give the land *heart* for the next crop. Such farming will eat up any man's land. It is mere skinning; and to cap the climax the plow was rnnning only about four inches deep, instead of six or eight.

Clovering land.—We saw but one field in clover, and that was in admirable condition. Do our farmers use clover as much as it might be used with advantage? There is reason to fear that there is very little attempt at regular *rotation*. For, although some kinds of land will bear some kinds of crops for ten years without seeming exhausted, yet there is no *whole* farm, which, regarding the interests of *all* the crops taken together, would not be largely profited by a regular rotation.

Neatness.—We saw few houses or yards which were not in a bad condition. We don't expect every house to be a palace; nor is this a reason for making them pig-pens. All the slops from cooking, washing, &c., need not go down before the door; pigs need not range and litter and root up the yard. It is just as easy to have neatness in a log cabin as in a brick mansion. Neatness is not an attribute of any *place* or *house*, but of the persons who manage them. And both for moral and physical reasons it ought to be found in every farmer's family. We are quite sure that we have found out some of the places from which such unutterably dirty butter comes to this market.

State University. We attended the annual commencement of this flourishing institution at Bloomington. The occasion was one of great interest. The prospects of the university were never so cheering as now. An able and united faculty, no debt, one hundred and seventy-one students on the catalogue for 1844–5, are circumstances indicative of great prosperity. The appearance and behavior of the young gentlemen of the University were highly in their favor; we wish we could say as much for the mischevious urchins of the *town* of Bloomington. A ru-

der, noisier, and more saucy set, of unbe-whipped chaps never blocked up the doors of a college; and with hooting and shrill whistling, made an addition to the commencement exercises not according to our notions. Cannot the trustees and faculty defend themselves from such juvenile imposition? But this was really the only draw back upon a day of great pleasure and profit.

INDIANA FARMER. — What is the reason we don't get the Farmer and Gardener? — We have not had one for the last two months. We have complied with the terms of exchange, made and provided, and we would like to know whether we are to be cheated out of this valuable work!

Kosciusko Republican.

In view of the above text we say *firstly*, that the editor of the Republican is represented to us, by Defrees of the Journal, as a fine and clever fellow; *secondly*, he has been a farmer and knows all about earth-craft; *thirdly*, he maintains an agricultural department in his paper, (an infallible sign of a good paper;) and, what is more, writes for it himself; *fourthly*, he would not have shown his teeth in this matter, if our paper were not worth having. Finally, we send the paper.

Wheat in Sweden.

A singular statement occurred, in the course of our reading the other day, to this effect: Nothing is met with in Sweeden to this day, but rye cakes almost as hard as flint, as they bake only twice a year. In 1812, a baker in Gottenburg, received an order from the captain of a vessel, to bake wheaten bread to the value of £1, or five dollars worth; but the baker afarmed at the risk, *required security for the payment*, since, had the bread been left upon his hands, he could not have disposed of so large a quantity in that town, notwithstanding it had a population of 23,000!

Climate for Wheat.

The farmers of this region have frequently expressed the opinion, that wheat will not do so well as far south as this, as in northern Indiana. But it is a mistaken notion. The warmest parts of the temperate zones are the most favorable for wheat. Neither are humid climates so favorable as moderately dry ones. English wheat is admitted to be inferior to the French — the wheat of Italy is still superior to that of France; while that raised in Sicily is the best *European* wheat. Even this, is second to the wheat of Egypt and Barbary. The wheat of southern Europe, and of other warm climates, has more gluten, and, consequently, is more nutricious than that of the north. It is not climate or soil that is against wheat, in central Indiana; it is the want of *cultivation*. Everything will be right when *farmers* are right.

ORIGINAL CORRESPONDENCE.

For the Indiana Farmer and Gardener.

Country and City.

Mr. Editor: A gentleman of observation from one of our principal cities of the west, stated to me, that in point of fact, almost all the leading men of the cities were from the country, and had been raised farmers' sons. The reasons seemed to me quite obvious. The vigorous health, patient industry, thorough economy, and hard thinking necessary to success are the product of the country and but seldom of the town or city. A large part of the best merit and talent of the country doubtless remains upon and adorns our farms. Another portion is drawn by a spirit for enterprise of a different kind to our towns. When they enter they find an active competition that brings out their best efforts. Success on their part takes away the necessity of effort on the part of their children; and the next result is, that their children become reduced in means and merit, and every element of success, and are driven to some refuge in vice or petty employment. It is therefore the duty of the man who has been successful in town, to retire to the country again that his children, who are to succeed him, may partake, as far as possible, of his advantages. Y.

The *facts* stated we believe are undoubted; the business men—merchants, lawyers, physicians, and clergymen of large cities are, to a large degree, drawn from the country. And there is a system of *circulation*, if the facts could be well made out, worth attention. In travelling, one day last year, the rain drove us into a country tavern, where a fat man of some fifty years' of age was waiting to entertain us with a dish of philosophy, (of which, considering our accommo-

dations, we had special need.) But we were led to notice one part of his remarks: "You see, sir, every-thing comes round in about four generations. First comes the enterprising and hard-working fellow who gets the money; then his children begin to live in style; but their parents' example and stamina keep them pretty well up; but *their* children begin to run down; in their hands the property is wasted and they die poor; and the fourth race begin in poverty, and work upward again." Now, if our fat and somewhat dogmatical friend has reasoned aright, there is a degenerating and rejuvenating process going on in society, having a period of about four or five years. We give the theory for what it may be worth.

Ed. Ind. Far. and Gard.

For the Indiana Farmer and Gardener.

Fly Weevil or Angoumois Moth.

This region has been afflicted occasionally, since its settlement, by an insect which our farmers call the fly-weevil, or yellow weevil, to distinguish it from the weevil of the south; which has only once affected us; which they call the black weevil, and which is a beetle and not a fly. It is not the fly weevil of Maine. In the New England Farmer of the 27th August last, in a communication signed Henry Poor, that weevil is thus mentioned: "The weevil fly deposits its egg while the wheat is in its incipient state, when the hull is open and in blossom. The maggot then commences eating, while it is in milk. They can do no harm when the hull has closed." But *our* weevil does do nearly *all* its harm after the hull has closed; and, indeed, after the grain is stored. In 1844 our farmers were somewhat alarmed by the appearance of the weevil fly immediately after harvest; but there was not much injury that season. The writer, alarmed by the insects about his wheat, and by the general stir among his neighbors, in the middle of August, tramped his wheat out, and left it in the chaff in a corner of his barn, cleaning it up as wanted, until March, when the last was fanned and put up in a perfectly tight bin. There were some flies about the wheat all the time; and there has always been a few to be seen on the sides of the bin whenever it has been opened. The writer saw the same fly about his *corn*-crib early in June last; and one of his neighbors, who had some seven hundred bushels of corn on hand, has been much injured.

In the present season, shortly after harvest, the weevil fly appeared in increased numbers; in quantity sufficient to discourage purchasers and to alarm holders; and, already, much injury has been done. Our wheat harvest was over before the 1st July. The writer, about the 27th of August and two months after the wheat was cut, thrashed his wheat with a machine; and it is now in his barn in the chaff. In appearance, the number of flies is decreasing, and the injury will not be great.

The writer and some of his friends have taken some pains to ascertain the nature and habits of this insect; but without the proper knowledge of entomology, and without glasses of sufficient power; the best they had not magnifying more than eight or ten times. The fly, when full grown, is about three-eights of an inch long, and of an ash color; it has four wings, four legs, two long feelers extending from the side of the head, *and two short feelers or horns of a dark color arising from the front above the eyes and turning back over the head.* Although the writer examined many insects, he found not one that exhibited any appearance of any apparatus for the insertion of the egg into a receptacle for it. During August, the writer examined his own wheat, repeatedly, and several parcels of cleaned wheat; and found grains out of which the fly had made its way, and noticed that all these were shrunken or shrivelled grains — all plainly defective; until the 1st of September he did not find any weevil-eaten grains that appeared to have been perfect. Since then he has found such grains that seemed perfect; and this morning, (the 12th September) he found in one handfull of wheat three perfect grains out of which the weevil had issued. The worms when hatched, are too small to be seen by the naked eye, but have been examined by the writer and by his friends, with glasses. When thus examined, they appear of a color resembling that of the grains of wheat; the head is large; they seem to have feet at each extremity, as they move by drawing up the middle of the body. These worms have been seen crawling amongst the clean wheat, and beginning to eat into the grain. On opening the grain, out of which the fly has gone, with the aid of the glass, and sometimes without, the skin of the chrysalis may be seen. During the past week, the writer has examined a large loft on which a quantity of clean wheat is spread. On the posts and other timbers small whitish spots may be seen; with the aid of this glass, such spots may be found occasionally on grains of wheat; these are masses of eggs.

From the above observations the writer is induced to think, that the first crop of flies after harvest, sprung from worms which en-

tered the grain in the field before it was perfect; that the worm hatched from eggs laid on the straw, or heads of wheat, in the field, by flies which survived the last winter, either as flies or worms or eggs; that there are, each season, successive generations, each infinitely more numerous than the preceding, of these insects; that the worm, as soon as hatched, attacks and enters the grain of wheat; that within the grain it becomes a chrysalis; that when prepared, the chrysalis casts its skin, and makes its way out of the grain, a fly; that the fly, when full grown, provides for the succession of another generation and dies.

In the New England Farmer, for March 24, 1841, there is a description of an European insect, the Angoumois moth, which is thus described: "It is in its perfected state a four-winged insect about three-eighths of an inch long when its wings are closed. It has a pair of curved feelers turned over its head; its upper wings are narrow, of a light brown color, with the lustre of satin; they are folded over the body lengthwise, and horizontally above, but droop a little at the sides; the rest of the body is ash-colored. The moth lays its eggs, which vary in number from sixty to ninety, on the ears of wheat, rye, or barley, most often while those plants are growing in the field; but sometimes also on the stored grain. The little worm, like caterpillars, as soon as they are hatched from their eggs, disperse, and each one selects a single grain into which it burrows, immediately, at the most tender part, &c. It turns to a chrysalis within the hull of the grain, having previously gnawed away the inside of one end so as to provide for its future escape; and in due time it changes to a moth, and comes out of the empty hull."

This seems a very accurate description of our fly, except that it does not mention the feelers on the sides of the head, of which certainly, our fly has two. With this exception, the insects seem the same in appearance and in habits. The ordinary feelers may have been omitted in the description, because such are common to almost all insects.

Such an insect, in a favorable season, might produce two, three, or four generations; the second might number 3600, the third, 216,000 and the fourth, 12,960,000. Hence it is not strange that wheat stacks and mows of wheat are often destroyed against winter. In this region the only remedy practiced as yet, is, thrashing and putting up the grain in the chaff. The heap soon heats; the heat is so great as to destroy the eggs on the grain or chaff, and the worms which may escape the rough handling; but it is not sufficient to injure the grain. Besides, in this state, it is not convenient for the fly to deposit their eggs, nor for the worm to get at the grain. The process seems to be deranged; and farther injury to any extent is prevented. But this remedy should be applied as soon after the grain is fit to stack as possible. The sooner the better. It is probable that it would be advantageous to dust the outside of the heap well with lime or salt; neither would injure the grain and either might serve to destroy the eggs or worms. The writer has heard this often suggested, but does not know that it has been done. If the wheat is fanned and put into very close bins, it will also prevent the multiplication of the insects, but the writer does not know that it would destroy the eggs or worm on the grain. The writer remembers to have read in some publication a communication from Judge Peters of Philadelphia, in which it was stated that water-tight casks would screen wheat from the weevil. In the New England Farmer for 31st March, 1841, reference is made to a communication from Col. Carter of Virginia, on the fly-weevil, in the first column of the "Transactions of the American Philosophical Society at Philadelphia." The State Library has that volume, and it might be well that the editor of the Farmer and Gardener should refer to it, and republish it. Perhaps, too, the communication from Judge Peters may be found in the same book.

SAML. JUDAH.

Vincennes, Sept. 12, 1845.

Mr. Judah's request to add the papers of Col. Carter, we have not complied with; as, after a diligent search on the part of the obliging State Librarian, Mr. Dillon, the transactions of the American Philosophical Society are not to be found.

At Mr. Judah's request, we ask of our correspondents, and by the courtesy of exchange papers, of all gentlemen observant of such matters, information as to the extent of country affected by this fly weevil. Does it reach north of 40°?

A weevil infects the wheat of this region; and we have heard of it in the river counties; but whether identical with that described by Mr. Judah, we have not yet had leisure to ascertain.—*Ed. Ia. Far. & Gard.*

A cheerful look, and forgiveness, is the best revenge of an effront.

Your looking-glass will tell you what none of your friends will.

Pleasures of Horticulture.

There is no writing so detestable as so called *fine writing*. It is painted emptiness. We especially detest fine writing about rural affairs—all the senseless gabble about dew, and zephyrs, and stars, and sunrises—about flowers, and green trees, golden grain and lowing herds, &c. We always suspect a design upon our admiration, and take care not to admire. In short *geoponical cant, and pastoral cant, and rural cant* in their length and breadth are like, the whole long catalogue of cants, (not excepting the German Kant) intolerable. Now and then, however, somebody writes as though he knew something; and then a free and bold strain of commendation upon rural affairs is relishful. In looking over an old volume of the American Quarterly Review we find and extract the following in praise of Horticulture.—*Ed. Ia. Far. & Gard.*

This delightful branch of art cultivates herbs for pharmacy, delicate and nutritious vegetables for the table, orchards and vineyards for their delicious fruits, bees for their honey and wax, forest and ornamental trees for their uses in ship and house building, and, lastly, flowers to regale the senses.—This is the occupation that gives vigour to the body, and serenity to the mind. It is a pursuit that places a man above his fellows—for the broad and *living* canals—the ships and warehouses of commerce—the compact ranges of manufactories—the folios of science—the achievments of genius—do not so much perpetuate a man's fame to posterity, as do the noble trees he has planted, which, receiving their sustenance from heaven, and their health from man's care, scatter their abundance and usefulness over the face of the whole earth.

Let him who is engaged in the racking cares of commerce, say in what frame of mind *his* eyes close in sleep, and what are the anxieties of his waking hours. Let the manufacturer tell of his feverish dreams by night, and his dyspeptic symptons by day,—Let the literary man expose the ills to which the studious are liable from lassitude of body and irritation of mind. Let the professional man descant on unjust preferences, and on the tardiness of rewards. Let the artist speak of envy, jealousy, and want of patronage. Let science, too, open the labratory, and show the hydra with which she has to contend. Trace them all through their labours, their pleasures, and their perils; pursue them through crowded streets, the deleterious effluvia of gutters, the propinquity of vice, the contagion of diseases, the ringing of fire-bells, offal carts, banks, hose companies, exchange offices, eating houses, omnibus stages, and, worst of all, idle children! Look at all this—follow these men—look at their daily walks and occupations—and then turn to the horticulturist.

Follow him to his repose at night—deep, tranquil, and refreshing. No incubus, in the shape of a protested note, takes away his breath. No nightmare, in the form of a printer's devil, rides through his brain. His dreams are not harassed by thieves that rob the vaults, the keys of which are tied to the wrists of the cashier for safety. No villanous hook catches him by the waistband, and drags him through intricate machinery that he may be crushed at once, or dashed to pieces by the fall, while, suiting the action to the feverish though, he bounces down in the bed, awakened by the dislocating shock with the horrid reality of having fallen! He dreams none of this. *His* midnight fancies, like the true scenes of the day, are through green fields and blooming orchards. He still hears the music of birds, the hum of bees, the murmuring of brooks, the joyous laugh of children, the whistle of the gardener, the tender voice of his wife, and he awakens—gratified and refreshed—only to a continuence of the same pleasures.

Yes, he awakens only to feel more strongly the fresh breeze of the morning, and the aroma of a thousand plants which shed their fragrance more freely *before* sunrise. He walks out amongst his contented labourers, and encourages them by his kindness—all within is peace and gratitude, and a well regulated repast welcomes him back to partake of its wholesomeness and delicacy. All this he doubly enjoys from the consciousness that it is the work of his own hand. And, above all, comes the thought that, unlike those who follow other occupations, he has but *one* master—one who, asking nothing for himself, gives all that is required of him—bright sunshine, soft falling showers, winds that drive away pestilence, lightnings that purify the air, cold that rests the tired soil, health, and a grateful spirit, which enables him to perceive and enjoy all these blessings.

Such a man—and there are many such—would not exchange one of the tranquil hours of twilight, when the deep shade falls, for all the fictitious sentiment and brilliant display of a ball room, or a convival party. He can, at once, commune with higher powers, and, in every succeeding year, as the shadows of evening draw in more closely on his fading vision, and external sounds fall more faintly on his ear, his nature will approximate more to the simplicity and purity of

innocence. No painful retrospect of duties neglected, of broken faith, of sanguinary battles, no fears of the deep curse which rests on him who has injured the widow and the fatherless, disturb the evening of his days. Rather than have the lame and expire like poor Napoleon, with "tête d'armée" upon his lips, he would prefer the happy style of the good Abbott Boniface, who, raising his feeble eye to the falling dews, exclaimed, "what a fine dropping morning for the early colewort."—*Amer. Quar. Review, vol. XXI, p.* 366.

The Alpacca or Peruvian Sheep.

It is now four years since we invited public attention to this useful and most beautiful animal, giving also, at that time, a fine wood cut of the same. Until very recently, we have seldom observed any notices of the animal, and have heard of no attempts to introduce and naturalize it in the United States. Some facts in regard to it are contained in the last report of Mr. Ellsworth (late of the Patent Office,) and a late number of the Baltimore American states that an intelligent agriculturist of Alabama strongly recommends the importation of these animals, and estimates, that if purchased in South America at five dollars; they might be brought to Mobile and sold there for twenty dollars per head. It is well known that the manufacture of the *Alpacca* wool into a fine and durable cloth, has increased rapidly in Great Britain during the last few years, and efforts are making to naturalize the animal in that country. WILLIAM WALTON, Esq., of London, who formerly resided for a time in *Lima*, has published much on the subject, and contributed more than any other person to excite a desire for the introduction of the animal into mountainous districts of Wales and Scotland. That this fine animal would thrive in the mountainous regions of Tennessee, Georgia, and Virginia, and very possibly in most parts of the country, we have little doubt. And as the growing and manufacture of wool are becoming interests of great value in the United States we hope some of our enterprising citizens will make a fair experiment in regard to the adaptation of the Alpacca to our country and climate. We extract the following statement from an article by Mr. Walton.

In Peru the alpacca is only shorn every third year, towards the month of April, when the wool is usually eight inches long on the back, and nine on the sides. In each year it consequently grows about three inches so that if the alpacca were stripped of his fleece at the end of the second year, the staple would still be six inches long, a more suitable length, one would imagine, for the purposes of manufacture.

The Peruvian sheep are peculiar to that part of South America bordering on the Pacific, which extends from the equator beyond the tropic of Capricorn, that long and enormous range of mountains known as the Andes Cordilleras. Along the massive pile every imaginable degree of temperature may be found in successive gradation. Below stretches a narrow strip of land, washed by the sea, where the heat is intense and it never rains, but where, owing to heavy dews and filtration from the mountains, vegetation is luxuriant and an eternal spring reigns.—As one ascends, the aspect of the country changes and new plants appear; but no sooner are the middle summits gained, and the sun has lost its power, than those cold and icy regions rise up, one above the other, called by the natives *punas*, which are again crowned with rocky crests, broken by deep ravines and rugged chasms, and presenting a wilderness of crags and cliffs never trodden by the human footstep, and never darkened, except by a passing cloud, or the eagle's wing.

In the land of mist and snow,
"More wild, and waste, and desolate than where
The white bear, drifting on a field of ice,
Howls to her sundered cubs with piteous rage
And savage agony."

or rather in the hollows which surround it, feed the guanaco and vicuna, at an elevation of 12,000 or 14,000 feet above the level of the sea; while in the lower regions, stretching immediately under the snowy belt, and where the Indian fixes his abode, at a height from 8,000 to 12,000 feet, may be seen pasturing those flocks of llamas and alpaccas which constiiute his delight, and at the same time the principal part of his property.*

Here amidst broken and precipitous peaks, on the parapets and projecting ledges, slightly covered with earth, or in the valleys formed by the mountain ridges, like the Pyrenean chamois the llama and alpacca upick p a precarious subsistence from the mosses, lichens, tender shrubs, and grassy plants which make their appearance as the snow recedes; or, descending lower down, revel in the *pajonales*, or as in some parts of the country they are called, *ichuales*—naturul meadows of the *ichu* plant, the favorite food of both the tame and wild kind. Thus the hand of man never prepares food for either species, both readily find it on their native mountains. Besides the extremes of cold, these animals have equally to endure the severities of a damp atmosphere, for while below it seldom rains, in the summer months, when evaporation from the sea is abundant, clouds

*The town of Riobamba is estimated at 11,670 feet above the level of the sea. The convent of Mount St Bernard is 8,040, and that of St. Gothard 6,810: while Ben Nevis (Scotland,) the highest point in the United Kingdom, is only 4,370 feet above the level of the sea.

collect, and being driven over the lower valley by strong winds from the south and west, and condensed by the cold, burst on the highlands, where the rain falls in torrents amidst the most awful thunder and lightning.

It will be obvious that one of these animals is pre-eminently useful, and, on account of the fineness and abundance of fleece, deserves adoption in an agricultural and manufacturing country; I mean the alpacca.

This advantage, I repeat, we should gain by naturalizing the alpacca. However bleak and damp the situation, little does it matter for an animal requiring neither fold nor manager, and living in wild and desolate places, where the tender is often obliged to collect the dung of his flocks to serve as fuel for himself. Although delicate in appearance, the alpacca is, perhaps, one of the hardiest animals of the creation; his abstinence has already been noticed. Nature has provided him with a thick skin and a warm fleece, and as he never perspires, like the ordinary sheep, he is not so susceptible of cold. There is, therefore, no necessity to smear his coat with tar and butter, as the farmers are obliged to do with their flocks in Scotland, a process which, besides being trouble some and expensive, injures the wool, as it is no longer fit to make into white goods, nor will it take light and bright colors. In the severest winter the alpacca asks no extra care, and his teeth being well adapted to crop the rushes and coarse grass with which our moors abound, he will be satisfied with the refuse left upon them. In a word he would live where sheep must be in danger of starving.

Besides stocking our waste lands, the alpacca is likely to become a favorite tenant of the park, where its fine figure, graceful attitudes, placid disposition, and playful gambols, would excite interest. In 1811, when Mr. Cross exhibited his first alpacca in London, the late Lady Liverpool repeatedly went to see it, and so much was she delighted with its beauty, the softness and brilliancy of its coat, and its animated and beaming features, that she kissed it as if it had been a child, and had it turned loose on her own lawn, in order that she might witness its movements when freed from restraint."

This animal seems destined to compete with the deer. Its flesh, which, as well as its wool, would doubtless improve, is considered equal to venison, and peculiarly well adapted for hams. Its skin, when prepared, might be appropriated to various uses, such as the making of accoutrements, traces, straps, &c. The specimen of a Peruvian tribe, submitted to the Liverpool Natural History Society by General O'Brien, and made from the untaned alpacca skin will bear me out in this assertion. Already does this interesting animal adorn the pleasure grounds of the Earl of Derby at Knowsley, in Lancashire; the Marquis of Breadalbane, at Alberfeldy, Perthshire; J. J. Hegan. Esq., Harrow Hall, Cheshire; Charles Taaleure, Esq., near Liverpool; Mr. Stephenson of Oban, and others.

The task of obtaining suitable breeds of the alpacca is by no means a difficult one, and in our attemps to naturalize them we ought to feel encouraged when we reflect on the recent changes in the growth and supplies of sheep's wool and how soon a farming stock propagates under judicious management. It must be equally borne in mind, that in using alpacca wool we are not competing with that of our own sheep, but rather with that of the Angora goat (mohair) and silk; and the manufacture, it has been ascertained, does not cost half so much as that of the latter.

The importations of alpacca wool into Liverpool have steadily advanced since the article became known to the manufacturer, the best proof of its worth. In 1835 they amounted to 8,000 bales; in 1836, to 12,800; in 1837, to 17,500; in 1838, to 25,765; in 1839, to 34,543; and in 1840, to 34,924–more than quadrupled in six years. Since 1836 one Liverpool house alone has imported 25,000 bales, equal to three millions of pounds weight; and the total imports into the United Kingdom are by experienced persons, set down at six millions of pounds, which, realized at 2s., would amount to £600,000, with every prospect of an increase.

In almost every tailor's shop in the kingdom alpacca wool linings pass for silk. Black dresses for ladies, sprigged and flowered, are also manufactured from this wool, the silky glossiness of which far exceeds that of mohair. The imitations of silk are beautiful. Yarn spun from alpacca wool is now shipped to France in considerable quantities, at from 6s. to 12s. per lb.—*Jour. of Commerce.*

Peaches.—Our eastern friends are luxuriating on this delicious fruit, and the editors who have been favored with a *taste*, are in ecstacies at their good luck. A *sight* of a fine-flavored, juicy "free-stone," would be a novelty in this hitherto well supplied peach market. We saw a few half rotten green ones in market a week or two since, brought from Mill's Point, below the mouth of the Ohio river, which the seller asked forty cents per peck for. This is the only peach importation that we have heard of, this season. Some of our horticulturists may possibly have a stray one, that may find an opportunity to display itself at our exhibition of fruit.—*Cin. Atlas.*

Northern Agriculture.

A mercantile friend, who is an *amateur* if not a *connoisseur* in farming, being about to make a Northern tour, we requested him to jot down for the Planter the impressions that he might derive from his observations of Northern farming. Accordingly, we received from him a few days since a letter, from which we make the following extracts: —*Southern Planter.*

SARATOGA, July 24, 1845.

— Monday was an enjoyment to us; Mr. Bement, the landlord of the Amer. Hotel,(Albany)at which we staid, who is also an enthusiastic as well as a practical and scientific agriculturist, to whom I had a letter of introduction, immediately after breakfast brought out his buggy and drove us to his farm, called "Three Hills Farm," about three and a half miles from the city. It may be considered, I suppose, a premium specimen of a grass, grain, and stock farm. The soil, by a well conducted system of experimental cultivation, has been made both most agreeable to the eye, and in a high degree productive. It has an extent of only one hundred and eighty acres, which here is considered a large farm: and after seeing one such, you would be satisfied that the radical defect in our agricultural system is the too great extent of land taken into management. Management! To call the slovenly, bungling of Virginia farmers management, contrasted with the exactness and precision of Northern farming, is like calling a regimental militia muster a perfect drill in comparison with the movements of a crack corps.— Every foot of land is made to tell; the fields swell with timothy, red-top, or clover; corn, oats, and potatoes stand with the closeness and stiffness of a canebreak. There are poultry yards and poultry houses, sheep yards and sheep houses, cow yards and cow houses, pig yards and pig houses,—the buildings all framed, shingled, and glass windowed. It is true, Mr. Bement's premises show non-residence of the master spirit; but what is out of order at his, you find in others;— and then the stock! I shall never be able again to behold with patience the dry, crank-sided, bony things that we call cows. Why, sir, it is a delight to look at them here.— They are treated with the delicate attentions of a racer's stable; every one has her particular stall,—every one shows blood-like points prominently and beautifully developed,—every one has a coat of deep, soft, rich chestnut, or else an interspersing of mahogany and pure white—and a glossiness like a young girl's well smoothed hair. Their gentleness, their qualities and appearance make them treasures. Mr. Bement, as many others do, employs a farmer to reside on the place and manage for him. He furnishes him a house, and pays him two hundred dollars a year, with the use of wood, vegetables and milk for himself and family. Two other men, at a hire of one hundred and twenty dollars and their board, which costs one dollar and seventy five cents per week, each, constitute his regular force. In addition to which, two men for two or three months during the summer, for haying and harvesting, at twelve dollars per month and their board, are all that he has. So that his whole force for farming and attending to the stock, is three men the year round, and two extra for securing what is made. Such lands as his are worth about eighty dollars per acre; and he is offered seventy dollars per acre for the *wood*, (medium size pine,) which covers about twenty-seven acres. Of hay, which I believe is considered the most valuable crop, the lands will yield about three tons, worth at different seasons from seven to ten dollars; of rye, from forty to forty-five bushels; of oats from forty to sixty bushels. I was shown a field on which the grass crop had been doubled by the use of *anthracite ashes*. The stock, however, constitute the pride, and I doubt not the profit of the farm. And it is worth noting that the fancy prices which formerly and lately prevailed, are not now demanded. For instance, Mr. Bement owns a distinguished bull and cow which cost originally in England one thousand dollars for the two; he has, for sale, as noble an animal as you ever beheld, six years old, which he offers at seventy-five dollars. The greatest attention is paid to prevent unintentional crosses - and whenever a calf does not turn out well, or is considered defective in any particular, he is turned over to the butcher, regardless of pedigree. Mr. Bement has made many experiments in crossing,—always, of course, with some particular object in view. As, among his hogs; he aimed at full size, early maturity, easy keep, small bone, lightness of offal, and delicacy of meat. To accomplish which, upon the well known principle in breeding, that like produces like, he took the Improved Chinese, which is very short and fat, with strong hair; the Leicester, which has more length; the Derbyshire, which has still greater length and more weight; and the Neapolitan, with no hair, distinguished for the quality of its flesh; out of all which, he has formed what he calls his "Medley Breed," and which he considers superior to any he is acquainted with. In this way he has attained a weight of four hundred pounds, in hogs, of most capacious proportion, comely to behold, perfectly white, and hair of the length and fineness almost of a New Foundland dog—animals which you at once recognize as of high caste. The best weight is the average of from two hun-

dred and fifty to three hundred pounds, which they gain with very little feed. Think of this, in comparison with our runty, twist-tailed, grunting, squeaking mire wallowers! My word for it, our friends, the Hebrews, never would have considered these an "abomination," if such had been known in their early day!

But, again—and it illustrates how admirably Northern farmers combine the gratifications of comfort and appearance with usefulness—out of a small stream, no whit better for the purpose than you will find on almost every farm in Virginia, Mr. Bement, has constructed a lake, not more than two or three hundred yards from the house, which besides furnishing fish, and affording an agreeable prospect, is made to turn a small water-wheel, connected with a pocket edition of a grist mill, where not only the coarse food for the stock is ground, but the coffee for the family; and which, moreover, drives a forcing pump, with a supply of two thousand gallons of water in the twenty-four hours, through pipes, into a reservoir situated in the yard, at an elevation of fifty four feet, from which again it is conveyed in pipes to the stables, barn and, other out houses.—The whole machinery could not have cost a hundred dollars, and I should estimate it as worth twenty times that sum in real benefit to the owner. The construction of the dam, of course does not enter into my calculation of the cost. The three curious conical hills which give name to the farm, stand near the house; and from them, you look out upon a fine expanse of champaign country, adorned by a beautiful variety of rural scenery, and commanding a view of the famous Hilderberg mountains, as well as the more distant peaks of the Catskill.

Having passed the morning in this agreeable manner, after dinner we were driven by Mr. Bement to his neighbors on the other side of the city, Mr. Prentice's and Mr. Rathbone's. If in seeing Mr. Bement's, I had been pleased with what I considered a happy combination of agricultural skill and ornament, in seeing the others, certainly I was much more so since the proportion of ornament was much greater. Mr. Prentice's called "Mount Hope," which is the first you come to, and which has a distance of only about a mile and a half from the State House, the centre of the city, is a farm beyond all praise. Enjoying a superb position on the high bank of the Hudson just above Van Renssalaer Island, cultivated with a richness that excites admiration, adorned with costly taste, nothing cramped, all indicating profusion, high keep, and the most graceful control of nature, I know not how to condense any attempt at the description of the place. Without having seen the suberbs of Boston, which you know have much reputation for similar adornment, I thought when I first stood in the hall of Mr. Prentice's house, I had seen no such villa in this country. One not the least gratifying of the evidences of well-chosen expenditure which I saw around me, was the work of a young sculptor by the name of Brown, a native of Albany, who has executed for Mr. Prentice, in marble, four pieces representing the seasons—all indicating, I thought, talent—one of which particularly, accorded with my taste. But here again I must omit description. When we drove to the door, Mr. Prentice was not at home, but upon the touch of a strong bell, soon came up from his hay meadow,—a hale, well-bronzed, active, temperance-looking farmer, certainly not more than seven-and-thirty years old. I asked Mr. Bement how he had come by his money. "By steady industry," said he. "I remember him a few years ago, a boy in Albany, *peddling fur caps.*" Unfortunately for us, the large stock of blooded cattle for which this farm has been particularly known, has been very recently broken up by public sale. Some of those, however, that were sold, yet remain, and among those reserved, I saw the famous Durham mother of all, "Matilda," and the bulls "Fairfax" and "O'Connell," the former of which has taken the first premium wherever he has been exhibited. An animal of more masterly size, substance and power, you can scarcely conceive of. I know not what to compare him to, except a line of battle-ship. It is the opinion of both Mr. Bement and Mr. Prentice, that the Ayrshire breed of cattle is better suited to Virginia than the Durham; the one is much lighter than the other, but the quantity of milk is greater in proportion to the amount of food required; although the Ayrshire will give but sixteen quarts where the Durham will give thirty-two quarts in a day. I was pleased to hear that Mr. Haxwell and Mr. Wight, who were lately here, had supplied themselves with a choice selection from both Durham and Ayrshire. After passing through the grounds and stables of Mr. Prentice, he accompanied us to "Kinwood," the residence of Mr. Joel Rathbone, adjoining his own. Here again was an adornment still exceeding what I had before seen. The house is a Gothic cottage, on the plan of one, with the exception of the tower, which I remember to have admired in "Downing's Cottage residences." All the rooms open from a circular hall, and sure I am, I have never entered a house which so completely took captive my fancy. The expenditure is greater, more of ornament is brought together, than at "Mount Hope;" the styles

are different, and no doubt the objects contemplated diverse; but, in admirable coincidence of building, furniture, and luxurious finish, I doubt whether you would find in America the superior of "Kinwood." It was a regret to us that the family of Mr. Rathbone were not at home, Mr. Prentice, nevertheless, with the confidence of a neighbor, took us through the lower circle of apartments. We had intended a visit to Mr. William H. Sotham's stock, at a farm not far beyond, and which, perhaps equally with any others, are noted for their size, symmetry, pedigree, thrift and productiveness, but evening came on with too fast a pace. From the style of their residences and the description I give, you might conjecture these gentlemen to be *aristocrats:* nothing could be farther from the truth, and I dare say, they would feel offended if the term were applied to them. They show plainly enough, that in putting on the *gentleman* they had no idea of putting by the *workingman.* Among farmers, there are no secrets in business. With a real catholicity of spirit, they impart cheerfully what they know; and if it happens that they meet with one, like myself, who knows nothing, but who yet manifests a disposition to learn, the cheerfulness is increased, and displays itself in a more enthusiastic language, as if the enjoyment of imparting were fresher.

On the Proper Treatment and Management of Meadow Lands.

BY JESSE RIDER.

What I mean by meadow land, is that which, from the nature of the soil, is more natural to grass than grain; so much so, as to make it desirable to keep it all the time in grass. It also includes the light moist soils which are good for either grain or grass. As permanent meadow land, the same treatment applies to it all. And be it understood, I have reference to upland merely. To such land as, when poor, or the grass becomes thin upon it, is covered with red moss, or frequently mouse-ear, being reduced to the production of bull's-eye, or white daisy, all of which are the effect, and not the cause, of the absence of grass.

Those temporary meadows in dry lands, which come in a rotation of crops, where the grass is renewed after tillage, and remains in but a short time, do not come within the purview of this article. The very dryness of the soil, which compels frequent plowing, increases the profit of the farmer; his land is enriched by the easy and simple means of seed and plaster, in conjunction with the manure of the farm, and, as a general thing, such is the most profitable of all lands.

But a far different system should be adopted with land which is too heavy and wet for grain, without manure.

From the nature of things, it requires manuring highly to insure a crop of grain, and the fertility of the soil cannot be maintained in tillage husbandry, by the cultivation of clover, as is that of dry land.

Where the soil of a farm is all of that nature, there should be no more plowed than can be manured sufficiently to give good assurance of every grain crop sought to be obtained therefrom. Consequently, that portion of the farm under tillage should be small in comparison with that of the same number of acres of dry land. But with the treatment which such land usually receives, the amount of manure made from the produce of the farm is too insignificant to maintain, much more to increase, its fertility. The common practice is to plow it up when the grass runs down and take from it several meagre crops of grain, before it is again laid down to grass; then succeed two or three middling crops of grass, before it degenerates to the old standard, again inviting or compelling the owner to renew his impotent efforts to increase its fertility.

But such management is all wrong. The attempt to manage heavy land, the same as though it was dry, in order to renew the crop of grass upon it, necessarily involves frequent plowing, with the application of little or no manure to the greater part of it, from the insufficiency of the supply; consequently, the land grows poorer and heavier by the operation. For soils which are naturally too stiff, but have been lightened by vegetable matter, speedily degenerate under tillage, and become less porous as the vegetable matter works out; leaving it compact, and heavy, and unfitting it for the growth of plants; so that it requires a very successful new seeding with grass to again lighten it up and restore it to its former good estate. Such a system, then, should be adopted with such land, as will not diminish the amount of vegetable matter upon the surface of the soil. If it is desirable to plough the land, let it be up but one season as a summer fallow, and sown early with winter grain, and seeded with timothy in the fall, and clover in the spring; that enables the young grass to feed up the old, so that by the time the old roots are decomposed and appropriated to the use of the new crop, a more luxuriant growth is obtained, and the amount of vegetable matter in the soil increased, or, in other words, its fertility, or power of production is increased, which must be attributed to the large share of nourishment which plants derive from the atmosphere (being, according to Liebig,

nine-tenths of the whole,) that makes the old roots a basis for nine times their weight of vegetable matter to grow upon, or in the soil. This new estate can be obtained without manuring, as I shall show hereafter. Such, in my opinion, is the extent to which land not fitted for a succession of grain crops may be plowed.

But a far better way than plowing exists, in my opinion, to renew the grass upon old meadow lands. There are two ways in which it may be done without plowing, one through the agency of red clover, the other by top-dressing with manure, of which the one most important to be understood, because the easiest, and cheapest, is that which is effected by clover.

Strange as it may appear, clover is to stiff clayey soils when kept constantly in grass, and rightly managed, the same source of fertility that it is to dry land in a judicious rotation of crops.

Although it generally succeeds but poorly on such land in a new seeding, after tillage, owing to the roots being drawn out by frost, it by no means follows that such soils are incapable of producing it. On an old meadow matted with other grass, there is but little freezing and thawing of the surface to draw out the roots of clover, and the multiplicity of other grass roots tend to bind them to the soil.

But it requires peculiar management of meadow land to preserve in it a succession of clover so as to maintain the fertility of the soil, and renew other grass upon it, so as to increase its burthen, like to a new seeding.

By observation, I have been enabled to discover the circumstances which govern the production of clover on old meadows, which might be called an inductive theory of its operation. To secure its benefits, one general principle is to be observed, which is, to always let the rowen clover go to seed, before cattle are turned on to pasture the after crop.

The operation is simply this: suppose an old meadow that is running down to blue grass. Timothy and the other grasses are dwindling to a light crop, and there are plants of clover scattered over the land, which are permitted to spring up after mowing, and go to seed. The seed sheds abroad over the surface in the fall and winter; in the spring it comes up very early, and is protected from frosts by the old stubble and moss which is upon the land. The crop of other grass being light, gives the young clover a chance to grow, which consequently brings the land round to clover, the old grass preserves the roots during the winter, the next year it is up betimes, and takes possession of the ground by getting the start of other grass, provided the seeding is thick enough. If not, it seeds thicker the next fall, clover being on the increase, and thus it gets possession of the ground partially smothering other grass, and killing the moss. The land becomes completely renovated, but what becomes of the clover? The year it gets possession, there is naturally a great deal of seed grown in the fall, which scatters over the ground in great profusion; it comes up the next spring, but circumstaces are now very different, there being a full growth of other grass, the young clover is nearly all smothered in turn. The old clover dies and the soil is further ameliorated by its roots, and timothy, red-top, and white clover take possession, in a rejuvenescent state, young clover is more or less killed until the timothy and red-top dwindle again; and thus by proper management is clover made the agent of the farmer in fertilizing the soil, and increasing his crops, without the aid of manuring, or plowing; vegetable matter accumulates on the surface, the soil becomes more open and friable and pervious to air, heat, and moisture; and this is all done for a soil that is naturally wet and heavy without manure. But these changes of grass are not periodical.

The shortest that can be made are once in three years a crop of clover, but they are generally irregular, owing to the vicissitudes of seasons, affecting the young clover for good or ill.

There are many who suppose it necessary to leave the second growth of grass undisturbed, to rot on the ground, in order to preserve the fertility and maintain the productiveness of old meadows in grass, where top-dressing with manure is not resorted to. But such management is not only unnecessary, but oftentimes extremely hurtful, and the injury is proportioned to the amount left untrodden and unfed. If the amount left standing, or laying loose upon the surface be considerable, it, in the first place, makes a harbor for mice, which will, under cover of the old grass, intersect the surface of the land with paths innumerable, from which they cut all the grass that comes in their way, more especially the crowns of the clover plants of which they seem especially fond.

In the second place, the loose covering of old grass seems to operate to shade and smother the young grass in the spring, that the young mice may have left, more especially the young timothy, and the result is that a meagre crop of what is here called spear grass, or June grass, shoots up through the old grass as through a brush heap, in lieu of the good burthen of the year before.

1st. Always let the rowen clover go to seed.

2d. Always mow early, so that, if the season be dry, the clover may have a chance to get to seed. The hay will also weigh more and be of better quality.

3d. If the season be favorable and the second growth large, turn in upon it as soon as the clover seed begins to shed, in order that it may be sufficiently fed off and trampled down before winter, otherwise mow it the second time after sufficient seed has been shed upon the ground.

4th. If the aftergrowth be light, so as if left upon the land, it will not endanger the last crop by shade and mice, do not pasture it at all.

Such treatment of meadow land is generous and good, and that generosity will be returned. It does not admit of turning cattle upon meadows as soon as they are mowed, to bite the grass down to the roots, killing some kinds and injuring others. Timothy grass, for instance, generally requires the balance of the season after mowing, in which to recruit, so as to put forth its best efforts the spring following.

The more kinds of grass there are growing on the same ground, the greater the weight produced, and the thicker the growth. Each kind is supposed to require some specific food, not appropriated by the others, therefore they can feed together without robbing each other, and therefore it is that old meadows can be made to produce much more weight of grass than those newly seeded.

White clover is an important grass on flourishing old meadows. It grows very thick at the bottom of the other grass, although in a good season it will grow to the height of from twelve to sixteen inches. I have seen it in low spots completely covered for weeks together. Therefore land which produces abundant crops of grass would require extensive draining for grain, and seeing that plowing such land destroys its life it is far better to keep it in grass continually.

I now come to treat of top-dressing meadow land with manure to promote the growth of grass.

Where hay is much of an object of culture, and manure can be had, it possesses the following advantages over clover culture, in renewing the crop:

1st. The crop can be kept more uniform in amount by manuring while it is still fair, and before it runs out of blue grass, which generally precedes the change to clover — for, in the clover culture one or two middling crops must be expected in a round of from three to six years.

2d. If the hay is destined for market, clover is not as saleable as other grass, and it can be kept in a minority by pasturing the meadows close after mowing, and top-dressing with manure.

3d. Heavier crops can be obtained by top-dressing than by any other system of management, the clover system seldom giving over two tons of hay to the acre, at one cutting — new seeding with timothy three tons, when top-dressing gives three tons and upwards. Three and a half tons to the acre, obtained by top-dressing, will stand up as well as two tons of timothy newly seeded, being so much thicker at the bottom, and growing so many more kinds of grass. I have obtained three and a half tons to the acre in a good season, by spreading ten two-horse wagon loads of fresh livery stable manure to the acre, in February, on a stubble principally timothy the year before, when a portion of the meadow not dressed gave but two tons. I have spread fifteen loads of manure to the acre on poor, wet, heavy, meadow land, in the fall, where about half a ton of white daisy grew to the acre. The next year the crop was about one and a half tons of daisy and other grass, particularly red clover; the year following timothy began to get possession — crop about the same in weight. In the fall I put on about ten loads more to the acre, of swamp manure, that had laid one year in the hog pen; the result was full three and a half tons of hay to the acre of timothy, and some white daisy of equal height, and very tall. The next year there was a very heavy growth of timothy without daisy, which was now mastered and killed. Two things I have ascertained by top-dressing, which may be useful for some farmers to know. One is, that it is the only way to exterminate from meadows daisies and weeds, and be paid for doing it, instead of paying for having it done.

Bull's-eye or white daisie, does not grow on my meadows, after the yield comes to exceed a ton and a half to the acre, except the year following the application of the manure — the growth being promoted for one year as much as that of other grass.

Another thing useful to know, is, that it pays better to manure good land than poor, when in grass; the limit being where the effect is neutralized by the grass lodging early, and rotting at the bottom — at least such is my experience.

As concerning the time in the year when manure should or ought to be applied to grass grounds, it is, or must be varied by circumstances. But this much I will say, that it may be done as soon after mowing as is convenient, and not later than the first of March, in this latitude.

If the land be naturally wet, so that in the

spring months it is saturated with water, the manure should be applied as soon as possible after it is mowed. By so doing, the rain which falls in the dry part of the season soaks into the ground, and carries with it the strength of the manure, which is thus secured for the benefit of the land. If on such land it be put on in the winter, the spring rains float off a great part of its substance, and the effect is comparatively trifling.

I have seen as good effects from manuring in the summer, spots so wet that nothing but wild grass grew, as I have from manuring land that is esteemed dry enough; it causes red-top to grow in such places most luxuriantly.

Another case where the manure should be applied early, is where the land is so poor that the grass is weak and thin. In such cases it should be applied immediately after mowing, so that the grass may have time to thicken up in the fall, for the year following. The greatest effect from the manure will then be observed in the first crop of grass. If it be put on late, the greatest effect will not be observed until the second crop is obtained. Early spreading is generally the best on any meadow land. I prefer unfermented stable manure, with the litter undecomposed, to the same manure in a rotten state; and hot, dry weather, in summer, forms no objection with me to applying it immediately. In the dryest weather, the grass will soon spring up through the manure, when it will not grow at all on the parts adjacent.

The manure should be spread very evenly over the ground; if it be long manure, it should be shaken fine off the fork. There are but few hired men who are willing to perform the work aright.

I have used earth from the road-side, swamp manure, swamp manure with leached ashes spread on it after it was applied to the land, and leached ashes alone for top-dressing, of which the swamp manure and ashes together produced the greatest effect, being fully equal to stable manure, and will no doubt be much more lasting. The rich earth from the road-side, on the second year, more than four times paid for its application. Ashes alone shows a decided good effect. The swamp manure alone has been on for two years without having effected much change — I suppose, because of its insoluble state, and the grass roots not having got hold of it — but I do not despair of its ultimate good effects. I think that, as a manure, it should always be applied to the surface, that it may be dissolved by the gasses that float in the atmosphere, aided by the roots of the grass when they have taken possession of it. I know that it is extremely favorable to the growth of timothy when it is once appropriated to its use, and that the crop is maintained for a long time. Rich earth, from the sides of the fences, where it has been washed or plowed in, would be excellent for top-dressing; never mind if the bushes are killed by it. In top-dressing with stable manure, I make a point to sow plaster upon it as soon as I can after it is applied, and the more manure I put the more plaster I sow, more being required to arrest ammonia in its escape.

As I do not think that moving without manuring necessarily impoverishes the land, and as I think that my meadows are rich enough, I shall hereafter depend on clover, and top-dressing with any substance that will lighten the surface soil, to kill the moss and renew the grass.

As an instance of the effect of clover, I will mention that I know a meadow which twenty years ago was a barren waste — the soil heavy, and the water, in the spring months, escaped from it by flowing over its surface — no grass grew upon it. It was summer-fallowed and sowed with rye, timothy and clover seed; a little manure was put on a part of it. It has never been manured since, except by plaster; the hay from it has always been sold, and averages about two tons to the acre; it is in clover about one quarter of the time, and is managed as I have directed in this article; the soil is now very light, and the water soaks away freely.

When will farmers stop murdering their meadows, and keep more stock! which they may do under a better system. Better soil the cattle with green corn, sown for that purpose, or clover, than to pasture so close.

American Quarterly Jour. of Agricul.

Prof. Espy's Theory of Storms.

Every body has heard of Professor Espy, the Storm King! He recently delivered a couple of interesting lectures in this city, on his theory of storms — mode of causing rain, &c. Some people, we know, are inclined to ridicule the idea of producing rain in dry weather, by artificial means, but Professor Espy not only shows by argument and illustration, that it might be done, but he proves by the testimony of numerous and respectable witnesses that it actually has been done in a number of instances where his instructions have been put in practice. This is a subject of profound interest to the agriculturist, especially in view of the severe drought with which a large portion of this country has recently been afflicted; and believing that an explanation of the theory would be interesting to our readers, we shall devote a column or two of our space, to its elucida-

tion before long. In the mean time, let us take a glance at a somewhat different branch of the Professors meteorological researches, viz: the *phases* or laws of storms.

Professor E. has been in the employ of the government of the United States for two or three years past, in connection with the department of the surgeon general of military posts; and an arrangement has been made, by which he is in correspondence with over one hundred scientific observers, located in different parts of the continent of North America, who make daily observations on the weather—temperature, direction and force of wind, fall of rain, hail, snow, &c., and send him monthly returns of the same. From these extensive and long continued observations, he is enabled to compile maps or charts, showing the character, extent, and progress of all the principal storms that occur on this continent, and deducing therefrom, certain laws, which seem invariably to control these storms. He has kindly furnished us a copy of his report, published last winter, by Congress, containing thirty charts or maps of the United States, Canada, &c., illustrating the weather of as many days in the year 1843--by figures and symbols, showing the force and direction of winds, the quantity of rain, &c. &c., at a given time at each of the numerous places where observers are located. It is curious, and very interesting; and the observations, if continued, must, we think, lead to highly valuable discoveries, in this important, but hitherto, untrodden field of research. It may here be remarked that Professor Espy's theory of storms has received the sanction of the French Academy of Science, than which it is acknowledged a more learned body of men does not exist.—*Ohio Cult.*

The following are some of the "generalizations" deduced from the observations in the report to which we have alluded:

"1st. The rain and snow storms, and even the moderate rains and snows, travel from the west towards the east in the United States, during the months of January, February and March, which are the only months yet investigated.

"2d. The storms are accompanied with a depression of the barometer near the central line of the storm.

"3d. The central line of minimum pressure is generally of great length from north to south, and moves side foremost towards the east.

"4th. This line is sometimes nearly straight, but generally curved, and most frequently with its convex side towards the east.

"5th. The velocity of this line is such, that it travels from the Mississippi to the Connecticut river in about twenty-four hours, and from the Connecticut to St. Johns, Newfoundland, in nearly the same time, or about thirty-six miles an hour.

"6th. When the barometer falls suddenly in the western part of New England, it rises at the same time in the valley of the Mississippi, and also at St. Johns, Newfoundland.

"7th. In great storms, the wind, for several hundred miles on both sides of the line of minimum pressure, blows towards that line directly or obliquely.

"8th. The force of the wind is in proportion to the suddenness and greatness of the barometric depression.

"9th. In all great and sudden depressions of the barometer, there is much rain or snow; and in all sudden great rains or snows, there is a great fluctuation of the barometer.

"10th. Many storms are of great and unknown length from the north to the south, reaching beyond our observers on the Gulf of Mexico and on the northern lakes, while their east and west diameter is comparatively small. The storms therefore move side foremost.

"11th. Most storms commence in the "far west," beyond our most western observers; but some commence in the United States.

"12th When a storm commences in the United States, the line of minimum pressure does not come from the "far west," but commences with the storm, and travels with it towards the east.

"13th. There is generally a lull of wind at the line of minimum pressure, and sometimes a calm.

"14th. When the wind changes to the west, the barometer generally begins to rise.

"15th. There is generally but little wind near the line of the maximum pressure, and on each side of that line the winds are irregular, but tend outwards from that line.

"16th. The fluctuations of the barometer are generally greater in the northern than in the southern parts of the United States.

"17th. The fluctuations of the barometer are generally greater in the eastern than in the western parts of the United States.

"18th. In the northern parts of the United States, the wind, in great storms, generally sets in from the north of east, and terminates from the north of west.

"19th. In the southern parts of the United States the wind generally sets in from the south of east, and terminates from the south of west.

"20th. During the passage of storms, the wind generally changes from the eastward to the westward by the south, especially in the southern parts of the United States."

Freezing Water in red-hot Iron Vessels.—As extraordinary as this may seem, it has actually been done. At a late sitting of the British Association for the advancement of science at Cambridge, England, Professor Boutigny made some experiments showing the effects of bringing water in contact with red-hot iron; in the course of which, he actually produced ice in a vessel at a glowing red heat.

In the first place, the professor proceeded to show that a drop of water projected upon a red-hot plate does not touch it; but that a repulsive action is exerted between the plate and the fluid, which keeps the latter in a state of rapid vibration. At a white heat, this repulsion acts with the greatest energy, whilst it ceases, and the ordinary process of evaporation takes place at a brown-red heat. The temperature of the water whilst in the spheroidal state is found to be only 96°, and this temperature is maintained so long as the heat of the plate is kept up. To bring this water to the boiling point, to (212°,) it is therefore necessary to cool the plate. These phenomena are explained by M. Boutigny on the supposition that the sphere of water has a perfect reflecting surface, and consequently that the heat of the incandescent plate is reflected back upon it; and some experiments have been made, which show that this is the case, the plate becoming visibly redder over those parts on which the vibrating globule played. Several experiments were made in proof of this necessary cooling to produce ebullition.

Professor B. then proceeded to show that ice could be formed in a vessel at a glowing red heat. The experiment was beautifully performed by him in the presence of a very large audience, all of whom were extremely anxious to witness so curious a phenomenon.

A deep platina capsule was brought to a glowing red heat, and, at the same moment, liquid sulphurous acid, which had been preserved in the liquid state by a freezing mixture, and some water, were poured into the vessel. The rapid evaporation of the volatile and sulphurous acid, which enters into ebullition at the freezing point, produced such an intense degree of cold, that a large lump of ice was immediately formed, and being thrown out of the red-hot vessel, handed round to the company in the section.

Further experiments to show this repulsive action were also made by plunging a lump of silver at a glowing red-heat into a glass of water. As long as its bright redness was maintained, there was no ebullition; but as it slowly cooled, boiling took place. In this experiment, it appeared as if the glowing metal formed around itself an atmosphere; and the contiguous surface of the water appeared like a silver plate.

The application of the principles involved in these phenomena to the tempering of metals was also explained. If a metal to be tempered is in a highly incandescent state, the necessary hardening will not take place on plunging it into the water. It is, therefore, necessary that a certain temperature should be observed. Experiments were made to show that the repulsive power of the spheroidal fluid existed not merely between it and the hot plate, but between it and other fluids. Ether and water thus repelled each other, and water rested on and rolled over turpentine.

The bursting of steam-boilers came next under consideration; and it was shown that many serious explosions may be referred to the phenomena under consideration. In a great many cases, the explosions have occurred during the cooling of the boilers after the withdrawal of the fire. An experiment was shown in proof of the view entertained by M. Boutigny. A sphere of copper, fitted with the safety valve, was heated, and a little water being put into it, it was securely corked up, and withdrawn from the lamp. as long as the metal remained red, everything was quiet; but upon cooling the cork was blown out with explosive violence.

These researches of M. Boutigny will do much towards explaining many phenomena hitherto considered inexplicable.—*Cincinnati Atlas.*

Grapes.—Our markets are well supplied from the vineyards in the vicinity of this city, with the various kinds of grapes which grow so luxuriantly on the hills which skirt and overlook the "Queen." They can be purchased at reasonable prices by the bushel or the half-peck; and while we regret the absence of the peach, we can boast this year of as fine grapes as can be produced anywhere.—*Cin. Atlas.*

The Tomato.—Mr. Whittlesey in a letter to Dr. Kirtland, President of the Cleveland Horticultural Society, says the tomato has been used in the *west* as an article of food, for more than half a century. Col. Hamtramck raised them in Detroit and Fort Wayne before 1803, and Judge Thomas furnished his table with them at Lawrenceburg, Indiana, as early as 1807. *Fifty-two* years ago an Italian gentleman residing at Vincennes, Indiana, used them for making catsup, as well as for the table, both raw and cooked.

If you are vexed or angry, you will have two troubles instead of one.